

TENT COOPERATION TRE. /

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C.20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 04 October 2000 (04.10.00)	
International application No. PCT/EP00/01467	Applicant's or agent's file reference TS 0766 PCT
International filing date (day/month/year) 22 February 2000 (22.02.00)	Priority date (day/month/year) 23 February 1999 (23.02.99)
Applicant DRIES, Hubertus, Wilhelmus, Albertus et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
09 August 2000 (09.08.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p>Authorized officer Juan Cruz</p> <p>Telephone No.: (41-22) 338.83.38</p>
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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP00/01467

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).)*:

Description, pages:

1-3,6,8-18, as originally filed
20-22

4,4a,5,7,19 as received on 19/02/2001 with letter of 19/02/2001

Claims, No.:

1-13 as received on 19/02/2001 with letter of 19/02/2001

Drawings, sheets:

1/5,3/5,5/5 as originally filed

2/5,4/5 as received on 19/02/2001 with letter of 19/02/2001

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP00/01467

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-13
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-13
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-13
	No:	Claims	

2. Citations and explanations
see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP00/01467

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

D1: US 5 112 576 A

D2: US 4 623 446 A

D3: US 4 973 452 A

1. Novelty (yes)

The apparatus according to the invention differs from the apparatus disclosed in the prior art in that the gas outlet conduit of the primary cyclone does not protrude from the cover into the cyclone. This feature is not disclosed in the documents cited in the search report.

The subject-matter of claims 1-13 is novel over the prior art cited in the search report.

2. Inventive step (yes)

The technical problem is to improve the separation efficiency of the catalyst in a process for the separation and stripping of a mixture of fluid catalytic cracking catalyst in a fluid catalytic cracking process (page 4, lines 15-19 as originally filed).

The comparative examples show that the proposed modification of the gas outlet conduit configuration in the primary cyclone solves this problem. The separation efficiency is improved and the pressure drop is reduced by comparison with primary cyclone in which the gas outlet conduit protrudes into the inner of the cyclone.

Consequently, the subject-matter of claims 1-13 seems to involve an inventive step over the disclosure of the documents cited in the search report.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 00/01467

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C10G11/18 B01J8/00 B04C9/00

According to International Patent Classification (IPC) and to national classification and (IPC)

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C10G B01J B04C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category Citation of document, with indication, where appropriate, of the relevant passages

Relevant to claim No

X	US 5 112 576 A (KRUSE LARRY W) 12 May 1992 (1992-05-12) claims 1-3,7,8,12,13 column 6 - line 24; claim 56 column 7, line 20 - line 25 figure 1	1.3.5-7. 9.11.13. 15
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X	US 4 623 446 A (HADDAD JAMES H ET AL) 18 November 1986 (1986-11-18)	1.3.4.7. 9.11.14. 15
A	claims 1,2 figures 2-7	5.6.13

-/-

☒ Further documents are listed in the continuation of box C

☒ Patent family members are listed in annex

Special categories of cited documents

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "T" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

13 June 2000

26/06/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel: (+31-70) 340-2040, Tx: 31-65* epo.nl
Fax: (+31-70) 340-3016

Authorized officer

De Herdt, O

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/EP 00/01467

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication where appropriate of the relevant passages	Relevant to Claim No.
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X	US 4 973 452 A (OWEN HARTLEY) 27 November 1990 (1990-11-27)	1.3-5.7
A	claims 1-5 column 6, line 14 -column 11, line 18 figure 1	2.9-11, 14,15

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No.

PCT/EP 00/01467

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5112576	A	12-05-1992	NONE	
US 4623446	A	18-11-1986	AU 581888 B	09-03-1989
			AU 4195485 A	28-11-1985
			BR 8502388 A	21-01-1986
			CA 1262697 A	07-11-1989
			EP 0168916 A	22-01-1986
			ES 543291 D	16-04-1986
			ES 8606463 A	01-10-1986
			IN 165178 A	26-08-1989
			JP 4073469 B	20-11-1992
			JP 60255891 A	17-12-1985
			US 4737346 A	12-04-1988
			ZA 8503349 A	30-12-1986
US 4973452	A	27-11-1990	US 4820404 A	11-04-1989

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REC'D 29 MAR 2001

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

14

Applicant's or agent's file reference TS 0766 PCT	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP00/01467	International filing date (day/month/year) 22/02/2000	Priority date (day/month/year) 23/02/1999
International Patent Classification (IPC) or national classification and IPC C10G11/18		
Applicant SHELL INTERNATIONALE RESEARCH... et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 4 sheets, including this cover sheet.

- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 10 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 09/08/2000	Date of completion of this report 27.03.01
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Gosselin, D Telephone No. +49 89 2399 8400 

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference TS 0766 PCT	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below	
International application No. PCT/EP 00/0146/	International filing date (day month year) 22/02/2000	(Earliest) Priority Date (day month year) 23/02/1999
Applicant SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ B.V.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

GAS-SOLID SEPARATION PROCESS

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No.

EP 00/01467

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C10G11/18 B01J8/00 B04C9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C10G B01J B04C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 112 576 A (KRUSE LARRY W) 12 May 1992 (1992-05-12) claims 1-3, 7, 8, 12, 13 column 6 - line 24; claim 56 column 7, line 20 - line 25 figure 1 ---	1, 3, 5-7, 9, 11, 13, 15
X	US 4 623 446 A (HADDAD JAMES H ET AL) 18 November 1986 (1986-11-18) claims 1, 2 figures 2-7 ---	1, 3, 4, 7, 9, 11, 14, 15 5, 6, 13
A	---	---
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

Special categories of cited documents

A document defining the general state of the art which is not considered to be of particular relevance

E Earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

Z document member of the same patent family

Date of the actual completion of the international search

13 June 2000

Date of mailing of the international search report

26/06/2000

Name and mailing address of the ISA

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Authorized officer

De Herdt, O

INTERNATIONAL SEARCH REPORT

International Application No.

EP 00/01467

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant claim No.
X A	US 4 973 452 A (OWEN HARTLEY) 27 November 1990 (1990-11-27) claims 1-5 column 6, line 14 -column 11, line 18 figure 1 -----	1,3-5,7 2,9-11, 14,15

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

EP 00/01467

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5112576	A	12-05-1992	NONE	
US 4623446	A	18-11-1986	AU 581888 B	09-03-1989
			AU 4195485 A	28-11-1985
			BR 8502388 A	21-01-1986
			CA 1262697 A	07-11-1989
			EP 0168916 A	22-01-1986
			ES 543291 D	16-04-1986
			ES 8606463 A	01-10-1986
			IN 165178 A	26-08-1989
			JP 4073469 B	20-11-1992
			JP 60255891 A	17-12-1985
			US 4737346 A	12-04-1988
			ZA 8503349 A	30-12-1986
US 4973452	A	27-11-1989	US 4820404 A	11-04-1989